L15 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2003 ACS on STN

2001:293644 HCAPLUS AN

DN 134:319599

Method for fabricating gate oxide layer for a semiconductor device TI

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U.S., 8 pp. SO

CODEN: USXXAM DTPatent

LΑ English

ICM B32B019-00 IC

438240000 NCL

76-3 (Electric Phenomena) CC

FAN.CNT 1

PΙ

APPLICATION NO. DATE PATENT NO. KIND DATE -----\_\_\_\_\_ US 1999-385805 19990830 20010424 US 6221712

19990830 PRAI US 1999-385805

A method is provided for fabricating a gate structure. The method AB involves providing a substrate, followed by forming a nitride region on a surface of the substrate. With a Ta-based org. compd. and a Ti-based org. compd. serving as precursors, an metalorg. CVD (MOCVD) is performed, so that a Ta2-xTixO5 dielec. layer is formed on the substrate. A barrier layer, a conducting layer, and an anti-reflection (AR) layer are then formed in sequence on the Ta2-xTixO5 dielec. layer. Subsequently, the AR layer, the conducting layer, the barrier layer, and the Ta2-xTixO5 dielec. layer are defined to form a gate structure on the substrate of the nitride region. The Ta-based org. compd. in this case may include a Ta-alkoxide compd., whereas the Ti-based org. compd. may include a Ti-alkoxide compd. or a Ti-amide compd.

RL: RCT (Reactant); RACT (Reactant or reagent) (vapor deposition precursor; method for fabricating gate oxide layer for a semiconductor device)

172901-22-3 HCAPLUS RN

Tantalum, [2-(dimethylamino-.kappa.N)ethanolato-.kappa.O]tetraethoxy-, CN (OC-6-23)- (9CI) (CA INDEX NAME)

177580-52-8 HCAPLUS RN

Tantalum, tetraethoxy(2,2,6,6-tetramethyl-3,5-heptanedionato-.kappa.O,.kappa.O')-, (OC-6-22)- (9CI) (CA INDEX NAME)